

Amendments to the Claims:

1. (Cancelled)

2. (Currently Amended) A magnetic sensor device ~~as claimed in claim 1, in which the device is suited to detect the presence of at least one magnetic particle, the device further comprising:~~

a substrate;

5 a probe element supported by the substrate, the probe element including an array of binding sites configured to receive molecules labeled with magnetic particles;

a magnetic field generator supported by the substrate to generate a magnetic field through the probe element;

10 ~~a sensor circuit comprising the magnetic sensor element for sensing which senses~~ a magnetic property of ~~[[the]]~~ at least one magnetic particle received by the probe element which magnetic property is related to the generated magnetic field; and

a cross-talk suppression circuit which suppresses at least one of
15 capacitive and magnetic cross-talk between the magnetic field generator and the magnetic sensor element.

3. (Currently Amended) ~~[[A]] The magnetic sensor device according to claim 1-claim 2, wherein the cross-talk suppression means comprises and circuit includes~~ electrostatic shielding device between the magnetic sensor element and the magnetic field generator.

4. (Currently Amended - Withdrawn) ~~[[A]] The magnetic sensor device according to claim 1-claim 2, wherein the at least one magnetic field generator having has a first frequency and a first phase and the magnetic sensor element having has a second frequency and a second phase, wherein the cross-talk~~
5 suppression means comprises circuit includes at least one of:

an electrical frequency distinguishing means for distinguishing circuit which distinguishes between the first frequency and the second frequency; and

an electrical phase distinguishing circuit that distinguishes between the first phase and the second phase.

5. (Currently Amended - Withdrawn) [[A]] The magnetic sensor device according to claim 1-claim 2, wherein the at least one magnetic field generator having has a first frequency and a first phase and [[the]] an output signal of the magnetic sensor element having has the first frequency and a second phase equal to the first phase and a phase shift caused by the cross-talk, wherein the cross-talk suppression means comprises electrical phase distinguishing means for distinguishing between the first phase and the second phase circuit compensates for the cross-talk caused phase shift.

6. (Currently Amended) A magnetic sensor device according to claim 1, wherein the comprising:

a substrate;

a first magnetic field generator comprises including a first conductor supported by the substrate and [[an]] a first ac current source for generating which generates an ac current flowing through the conductor;

a magnetic sensor including a sensor element supported by the substrate and a sensor circuit which processes a sensor signal from the sensor element;

a cross-talk suppression circuit which suppresses cross-talk between the magnetic sensor element and the first magnetic field generator, the cross-talk suppression circuit combining a signal from the first ac current source with at least a component of the sensor signal.

7. (Currently Amended) [[A]] The magnetic sensor device according to claim 6, wherein the direction of the ac magnetic field is mainly perpendicular to the plane of the magnetic sensor element in the direct neighborhood of the magnetic sensor element cross-talk suppression circuit includes an electrical element that combines the ac circuit signal and the sensor signal.

8. (Currently Amended) A magnetic sensor device according to ~~claim 1, wherein comprising:~~

a substrate;

a magnetic sensor element having a second frequency on the substrate;

a first magnetic field generator which generates a first magnetic field on the substrate;

a further second magnetic field generator generates a second signal; with a third frequency for compensating the

a cross-talk suppression circuit which compensates for a cross-talk signal originating from the at least one first magnetic field generator having the first frequency.

9. (Currently Amended - Withdrawn) [[A]] The magnetic sensor device according to claim 1-claim 8, wherein a further the second magnetic field generator [(12b) has]] generates an anti-phase current or an inverse voltage for compensating the cross-talk signal originating from the at least one first magnetic field generator [(12a)] having the first frequency.

10. (Currently Amended) [[A]] The magnetic sensor device according to claim 1-claim 8, wherein said at least one the second magnetic field generator and said magnetic sensor element are positioned adjacent each other above a substrate second signal has a third frequency.

11. (Currently Amended - Withdrawn) [[A]] The magnetic sensor device according to elaim 7-claim 2, wherein said ~~at least one~~ magnetic field generator ~~[[(12)]]~~ is positioned between said substrate ~~[[(10)]]~~ and said magnetic sensor element ~~[[(11)]]~~.

12. (Currently Amended) [[A]] The magnetic sensor device according to claim 8, ~~the magnetic sensor element lying in a plane~~, wherein said first magnetic field generator is positioned adjacent one side of the magnetic sensor element and the ~~further~~ second magnetic field generator is positioned on ~~[[the]] an~~ opposite side of the magnetic sensor element ~~at a same position with respect to a direction perpendicular to the plane of the magnetic sensor element~~.

13. (Currently Amended) [[A]] The magnetic sensor device according to claim 8, wherein the magnetic sensor element lying-lies in a plane, ~~wherein and~~ said first magnetic field generator is positioned adjacent one side of the magnetic sensor element and ~~a further~~ the second magnetic field generator is positioned on the opposite side of the magnetic sensor element at a same position with respect to a direction one of parallel and perpendicular to the plane of the magnetic sensor element.

14. (Currently Amended) [[A]] The magnetic sensor device according to claim 13, ~~furthermore comprising means for determining further including:~~

a circuit which determines a concentration of magnetic particles adjacent the magnetic sensor element and the magnetic field generators.

15. (Currently Amended) [[A]] The magnetic sensor device according to elaim 14-claim 13, ~~wherein the means for determining a concentration of magnetic particles comprises a plurality of magnetic field generators~~ the cross-talk suppression circuit includes electrical frequency distinguishing circuitry which distinguishes at least between the first frequency and the second frequency.

16. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 15~~ claim 8, wherein the magnetic sensor element ~~lying~~ lies in a plane, wherein the plurality of and the first and second magnetic field generators are located at different levels with respect to the plane of the magnetic sensor element.

17. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 1~~ claim 2, further including:

a flux guiding layer [[is]] positioned between (1) the magnetic sensor element and the at least one magnetic field generator, and (2) the substrate.

18-19. (Cancelled)

20. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 19~~ claim 2, wherein said magnetic sensor element is a magneto-resistive sensor element.

21. (Currently Amended) [[A]] The magnetic sensor device according to ~~claim 20~~ claim 6, wherein the at least one magnetic particle is a magnetic label coupled to a biological molecule.

22. (Currently Amended) ~~Use of the magnetic sensor device as claimed in claim 21 for~~ A method of molecular diagnostics, biological sample analysis, or chemical sample analysis comprising:

passing a sample which includes biological molecules labeled with the magnetic particles over the magnetic sensor device as claimed in claim 2;

receiving some of the biological molecules in some of the binding sites;

measuring the magnetic property of the magnetic particles.

23. (New) The magnetic sensor device as claimed in claim 6, wherein the cross-talk suppression circuit applies the first ac current source signal to the sensor element.

24. (New) The magnetic sensor device as claimed in claim 6, further including:

a second magnetic field generator including a second conductor supported by the substrate and a second ac current source; and

wherein the cross-talk suppression circuit combines a signal from the second ac current source with a component of the sensor signal.

25. (New) The magnetic sensor device as claimed in claim 6, further including:

a second magnetic field generator including a second conductor supported by the substrate, the second conductor being connected with the first ac current source.